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A SYNOPSIS OF NORTH AMERICAN BIRDS OF
PREY AND THEIR
RELATED FORMS IN OTHER COUNTRIES

By

MAJOR L. R. WOLFE, U. S. Army



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During the past few years I have devoted considerable time to a study of the world distribution of birds of prey, and one point of particular interest which has been developed is the similarity between many North American forms and their closely related geographical races which occur on other continents. To those interested in the popular or semi-scientific study of birds the term geographical race or subspecies suggests a difference in color, size, or some other slight variation due to climatic differences of habitat through one continuous range, or closely adjacent ranges, and indicates no relationship with European or Asiatic forms. On the contrary, however, many North American birds represent geographical races of species found in other parts of the world, and the present ranges of many subspecies may be as widely separated as two continents. The consideration of geographical forms, therefore, assumes a much broader aspect and greater ecological significance when one realizes that certain birds from such widely separated places as Chile, Greenland, Australia, and South Africa represent the same species and can be distinguished only by slight differences in size or in the color or plumage. It is also interesting to note that some geographical races representing a single species are found only in the Americas and not in the Old World. Some groups are confined wholly to the Old World and never occur in America, others are Holarctic but never found south of the equator, and still others are distributed throughout the world.

Although the systematic arrangement of the species embraced by the order Falconiformes has been the subject of a vast amount of

research, our knowledge is still far from complete and, in some instances, unsatisfactory. Nearly all species in this order show considerable individual variation in plumage. Juvenile specimens often vary more than adults and a confusing problem is presented by the successive changes of plumage through which they pass during the first two or three years. Another factor which hinders proper classification is that much of the material available for study represents migrating birds and has little or no value in the determination of geographical forms. Hence some species are especially difficult to study and authorities are unable to agree on their classification.

In this paper it is intended to outline very briefly the distribution of the species and subspecies of birds of prey which occur in North America and their geographic races in other parts of the world. The major characters which separate the forms are indicated but no attempt has been made at complete descriptions. North American forms in the following list are preceded by an asterisk (*); among these are nine species which have no recognized geographic races. The sequence followed is that of the last A. O. U. Check List (1931).

I desire to express my thanks and appreciation to Rudyerd Boulton of the Field Museum of Natural History for permission to make use of the excellent collection of skins in that institution during the progress of this study, and I am equally indebted to Dr. H. K. Gloyd of the Chicago Academy of Sciences for his assistance in the preparation of the manuscript and maps.

THE VULTURES

The American vultures are distinct from all of the Old World forms and, while there is one South American species, *Cathartes urubitinga*, that is very closely related to the turkey vulture (and not distantly related to the black vulture), they have no close relatives in any other part of the world. The turkey vulture, the most widespread species, occupies one continuous area from southern Canada across the United States from east to west, and south to the southern tip of South America. Throughout this immense range there is a gradual change in size and in the color of the plumage. The largest individuals occur in the northeastern United States and those in the west average smaller. Southward there is a gradual decrease in size and a gradual darkening of plumage until in the tropical zones of South America the birds are comparatively small and much blacker than those from the north. The size gradually increases again toward the colder climates of South America and in Chile the resident form is nearly as large as the North American bird. This is strikingly in

accordance with the general rule for size variation in birds and mammals, known as the Bergmann Rule. Like many other species the turkey vulture has been separated into several geographical races and, while there is only a gradual change and no exact line of demarcation between the various forms, each is easily recognized when birds from within each range are compared.

The black vulture is a more tropical species and shows much less variation within its range. There is apparently no difference in color but the South American birds are said to be smaller, though even this has been questioned.

*** Eastern Turkey Vulture. *Cathartes aura septentrionalis* WIED.**

Range: Eastern North America north to southern Canada and west to central Ontario, Illinois, eastern Iowa, Arkansas, and Louisiana

This is the largest form of the species. The plumage is more brownish black than that of the southern forms and the wing coverts are more or less margined with pale brown. The tail is relatively long and the wings are large.

*** Western Turkey Vulture. *Cathartes aura teter* FRIEDMANN.**

Range: Austral zones of Western North America east to the range of, and intergrading with, the eastern race; southward to southern Lower California and the table lands of northern Mexico.

This recently described race (Friedmann, 1933) is similar in color to the eastern form but intermediate in size between that and the Mexican form. It has relatively small wings like the latter but a longer tail like the eastern subspecies.

*** Mexican Turkey Vulture. *Cathartes aura aura* (LINNAEUS).**

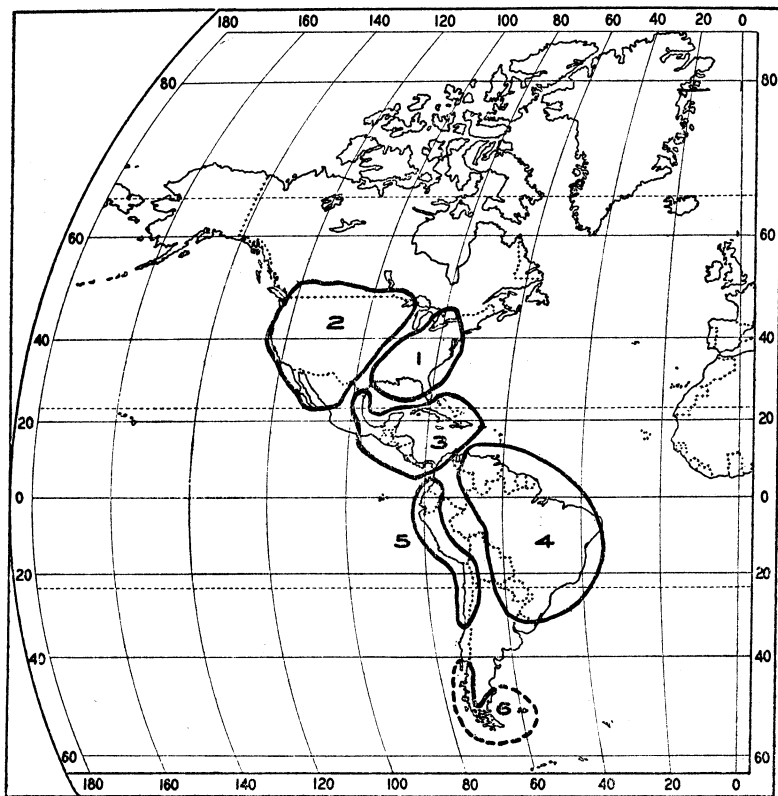
Range: From the lower Rio Grande valley of Texas (Brandt, 1936) south through Mexico and Central America to Panama and northern Columbia; the Bahamas, Cuba, Isle of Pines, Jamaica, Puerto Rico, and the Virgin Islands. It possibly occurs in southern Florida.

This race is smaller than either of the northern forms. The color is blacker, and there are fewer brown edgings to the feathers; the wings are smaller and the tail is comparatively short.

Brazilian Turkey Vulture. *Cathartes aura ruficollis* SPIX.

Range: Eastern South America from Colombia, the Guianas, Venezuela, and Brazil, south through Paraguay and northern Argentina; Trinidad and adjacent islands.

Slightly smaller than the Mexican race. The plumage is blacker and is glossed with blue and purple iridescence.



DISTRIBUTION OF THE TURKEY VULTURE

1—*Cathartes aura septentrionalis*, 2—*C. a. teter*, 3—*C. a. aura*, 4—*C. a. ruficollis*, 5—*C. a. jota*, 6—*C. a. falklandica*.

Chilean Turkey Vulture. *Cathartes aura jota* (MOLINA).

Range: South America west of the Andes and south to central Chile.

A larger form, nearly as large as the eastern North American race, but the plumage is blacker and similar to that of the Brazilian form.

Falkland Turkey Vulture. *Cathartes aura falklandica* (SHARPE).

Range: Falkland Islands and the adjacent coast of South America, north on the Chilean coast to Lat. 40°.

A smaller race, similar in size to *ruficollis*. The plumage is black but the median wing coverts and secondaries are distinctly shaded and edged with gray.

* **Black Vulture.** *Coragyps atratus atratus* (BECHSTEIN).

Range: North America from Kansas, southern Illinois, southern Indiana, and Maryland to the Gulf of Mexico; south through Mexico and Central America to Panama.

Slightly larger than the South American form.

Brazilian Black Vulture. *Coragyps atratus joetens* (LICHTENSTEIN).

Range: South America to about Lat. 40° on the east coast and to Chiloe Island on the west coast; Trinidad and adjacent islands.

This race has been described as slightly smaller and with a shorter tarsus than the northern form. In a recent paper on American vultures, Friedmann (1933) concludes that this is not a valid form and that individuals can not be separated from North American birds. The two races are recognized by nearly all European ornithologists, however. I have been able to examine only a few skins of this race but in my collection a small series of eggs taken in Chile, Brazil, Paraguay, and Trinidad have an average measurement of 70.5 x 50.0 mm. whereas the eggs of the North American black vulture average about 77.0 x 53.0 mm. With this large difference in the size of the eggs, it would appear that there is considerable difference in the size of the birds.

* **California Condor.** *Gymnogyps californianus* (SHAW).

Range: California, from the south-central coastal ranges to northern Lower California.

There are no geographical races of this species.

WHITE-TAILED KITES

The white-tailed kite is represented by two forms, one in North and one in South America. The genus is cosmopolitan, however, and there are closely related species in Africa, India, the East Indies, and Australia.

* **White-tailed Kite.** *Elanus leucurus majusculus* BANGS AND PENARD.

Range: Western California, from the Sacramento Valley to northern Lower California; of rare occurrence from southern Texas through the Gulf States to South Carolina and Florida.

In comparison with the South American race this form is larger, the tail is longer, the coloration is darker above and the black wing patches are relatively larger.

Southern White-tailed Kite. *Elanus leucurus leucurus* (VIEILLOT).

Range: South America, from Venezuela to central Chile and south-central Argentina.

SWALLOW-TAILED KITES

The swallow-tailed kite represents a genus that is found only in the Americas and, as in other species, the more tropical birds are smaller and slightly darker. The size increases again in the more temperate zones of South America. A very unusual thing about its distribution is that individuals from the extreme southern part of the range can not be distinguished from those from the northern part. For the purposes of nomenclature the southern birds are regarded as belonging to the Central American subspecies.

* Swallow-tailed Kite. *Elanoides forficatus forficatus* (LINNAEUS).

Range: South Carolina and Florida along the Gulf Coast to Louisiana.

Slightly larger than the southern form. There is less white on the neck and there is a difference in the shade of black on the back.

Southern Swallow-tailed Kite. *Elanoides forficatus yetapa* (VIEILLOT).

Range: From Costa Rica south to Paraguay and northeastern Argentina.

Differs from the North American form in being slightly smaller, in having bottle-green iridescence of the scapulars, and in that the white on the hind neck extends farther back.

MISSISSIPPI KITE

This kite represents a genus that is found only in America. It has no geographic forms but there is a closely related genus in South America.

* Mississippi Kite. *Ictinia mississippiensis* (WILSON).

Range: Oklahoma, central Kansas, and South Carolina south to southern Texas and northern Florida.

EVERGLADE KITES

The everglade kite or snail kite, as it is sometimes called, has been separated into four geographical races and has a rather unusual distribution in that the tropical form which occurs in eastern Mexico and Guatemala is larger than the more northern form.

* Everglade Kite. *Rostrhamus sociabilis plumbeus* RIDGWAY.

Range: Florida.

A long wing and small bill characterize this form. The plumage is paler above and the throat and head are more plumbeous than in the typical race.

Southern Everglade Kite. *Rostrhamus sociabilis sociabilis*
(VIEILLOT).

Range: Eastern Panama south to Paraguay and central Argentina.

The smallest race. The wings are comparatively short, the bill large, and the color more sooty black than that of the Florida form.

Cuban Everglade Kite. *Rostrhamus sociabilis levis* FRIEDMANN.

Range: Cuba and the Isle of Pines.

Characterised by having the long wings of the Florida race and the large bill of the South American form.

Mexican Snail Kite. *Rostrhamus sociabilis major* NELSON AND GOLDMAN.

Range: Lowlands of eastern Mexico and Guatemala.

The largest form of the species. The wings and tail are longer, and the bill is much larger and heavier, than those of the other forms.

GOSHAWKS

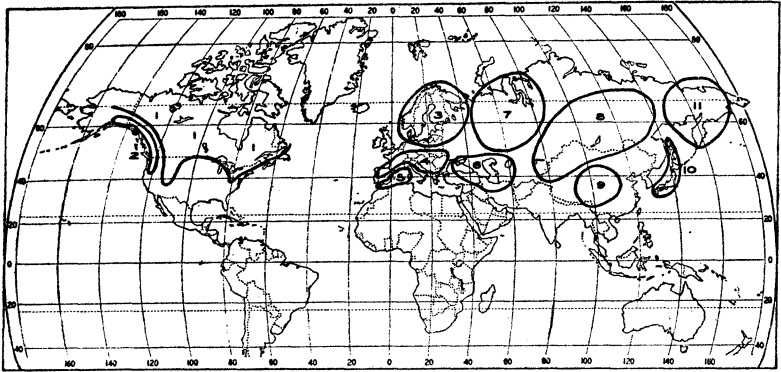
The goshawk is a very wide-spread species, occurring throughout almost all Europe and Asia as well as in North America, but not found in the southern hemisphere. As in several other species of similar distribution, it has been separated into numerous geographical races and few ornithologists agree as to the exact status of several forms.

Recent authorities unite the genus *Astur* with *Accipiter* (e.g., Peters, 1931) because the characters which have been used to distinguish the two genera are very slight and are, in fact, not distinctive in several of the intermediate species that occur in other parts of the world. The genus *Accipiter* is supposed to have the tarsi and toes longer and more slender and to have the middle toe much longer than the others. The American species, however, are easily separated by distinctive characters and for this reason both genera are retained in the A. O. U. check list of 1931.

*** American Goshawk. *Accipiter gentilis atricapillus* (WILSON).**

Range: Northwestern Alaska to Newfoundland, south to New Mexico in the Rocky Mountain region, to northern Wisconsin and Michigan in the central states, and to the mountains of southern Pennsylvania in the east.

The American forms differ from those of the Old World in being more bluish or slate-colored above, in having black shaft stripes and freckled or vermiculated underparts. The European and Asiatic forms are more brown above with underparts more or less barred.



DISTRIBUTION OF THE GOSHAWK

1—*Astur gentilis atricapillus*, 2—*A. g. striatulus*, 3—*A. g. gentilis*, 4—*A. g. gallinarum*, 5—*A. g. arrigonii*, 6—*A. g. caucasicus*, 7—*A. g. buteoides*, 8—*A. g. schvedowi*, 9—*A. g. khamensis*, 10—*A. g. fujiyamae*, 11—*A. g. albidus*.

* Western Goshawk. *Accipiter gentilis striatulus* RIDGWAY.

Range: Boreal zones of the Pacific Coast from Cook Inlet to northern California.

Plumage above much darker than that of the eastern form; underparts darker and more conspicuously and densely marked.

Common Goshawk. *Accipiter gentilis gentilis* (LINNAEUS).

Range: Scandinavian Peninsula, northern Europe and western Russia.

Ashy brown above; white below, barred with blackish brown; tail distinctly banded.

Southern Goshawk. *Accipiter gentilis gallinarum* BREHM.

Range: Central and western Europe, south to the Balkans.

Slightly smaller than the typical form. Juvenile specimens are darker below and the stripes are wider and more ochraceous.

Russian Goshawk. *Accipiter gentilis buteoides* MENZBIER.

Range: Northeastern Russia and Siberia east to the Yenisei River. Southern limits unknown.

Slightly larger and paler above than the typical form. The back is more bluish slate-gray in color and the cross-bars below are finer and farther apart.

Sardinian Goshawk. *Accipiter gentilis arrigonii* KLEINSCHMIDT.

Range: Southern coast of Spain and the islands of Sardinia and Corsica.
Smaller and very much darker than the typical form.

Siberian Goshawk. *Accipiter gentilis schvedowi* MENZBIER.

Range: Northern and central Asia east to the Amur River and south to the Himalayas and northwestern China.

Slightly smaller, more gray with little or no tinge of brown; barring below finer and paler than in the typical form.

Caucasian Goshawk. *Accipiter gentilis caucasicus* (KLEINSCHMIDT).

Range: The Crimean Peninsula, Caucasian and Caspian regions and Asia Minor.

A small, dark-colored form resembling the Sardinian goshawk.

Tibetan Goshawk. *Accipiter gentilis khamensis* BIANCHI.

Range: South-central Asia including Tibet and western China.

Similar in size to the Siberian goshawk but plumage very much darker. General coloration darker above and more blackish brown than that of the typical form.

Japanese Goshawk. *Accipiter gentilis fujiyamae* SWANN AND HARTERT.

Range: Japan and Sakhalin.

The smallest form of the species. Very dark with the underparts heavily barred and more black above than brown.

White Goshawk. *Accipiter gentilis albidus* MENZBIER.

Range: Northeastern Siberia and Kamchatka.

This race differs from all other forms in that the plumage is nearly white and the markings are very faint.

SHARP-SHINNED HAWKS

This species has no geographical forms other than those in North America and the West Indies, but the European sparrow hawk, *Accipiter nisus*, is a closely related species and its numerous subspecies occur over nearly all Europe, northern Africa, and Asia.

* **Sharp-shinned Hawk.** *Accipiter striatus velox* (WILSON).

Range: Northwestern Alaska to Newfoundland and south, in suitable localities, to the Gulf States and Arizona.

Slaty blue above with head and wing coverts slightly darker; underparts white, barred with pale rufous; tail slaty, barred with dark bands and narrowly tipped with white.

Cuban Sharp-shinned Hawk. *Accipiter striatus fringilloides* VIGORS.

Range: Cuba.

Smaller and more slender; underparts nearly white; cheeks rufous.

Santo Domingan Sharp-shinned Hawk. *Accipiter striatus striatus* VIEILLOT.

Range: Dominican Republic and Haiti.

Dark gray above with lower abdomen and thighs white; sides barred with brown.

Puerto Rican Sharp-shinned Hawk. *Accipiter striatus venator* WETMORE.

Range: Puerto Rico.

Similar to the Santo Domingan form but darker above and with more color below.

COOPER'S HAWK

* **Cooper's Hawk.** *Accipiter cooperi* (BONAPARTE).

Range: British Columbia through central Alberta to Quebec and southward over most of the United States to northern Mexico.

There are no subspecies of Cooper's hawk. A western form, originally described by Swainson in 1831, was claimed to differ in that the females were more rufous on the thighs and that the markings of the underparts were denser and more deeply color. Ridgway in 1876 pointed out that the western birds were darker colored throughout, the brown markings occupying larger areas and the white portions of less pure color but that there were too many individual variations to warrant the consideration of two races.

RED-TAILED HAWKS

The genus *Buteo* represents a very large group of round-winged, sailing hawks found in all parts of the world except Australia. All species are similar in habits but each has a great deal of individual

variation in plumage. In spite of years of study the exact status of many forms is not yet understood. This is particularly apparent with several races which occur in eastern Europe and central Asia.

The red-tailed hawk, a strictly American species, has the widest distribution of any of the New World buteos. As in numerous other species there is a decrease in size and a darkening of plumage in the more southern forms.

* **Eastern Red-tailed Hawk.** *Buteo borealis borealis* (GMELIN).

Range: From the Mackenzie district of the northwest Territories, northern Ontario and Newfoundland south to northern Florida; west to the Rocky Mountain region and south through central Texas and the Gulf States.

The name *Buteo jamaicensis* has been recently used (Peters, 1931) to replace *Buteo borealis* on the grounds of line priority. The original description, however, is questionable and not sufficiently clear and, since that name was discarded by the A. O. U. committee on nomenclature many years ago, preference is here given to *borealis*.

Typically the red-tailed hawk is characterized by a brick red tail, usually with subterminal black bar but no other markings. The underparts are buffy white with flanks and abdomen distinctly streaked with blackish brown.

* **Floridan Red-tailed Hawk.** *Buteo borealis umbrinus* BANGS.

Range: Southern Florida, Cuba, and the Isle of Pines.

Darker above than the eastern form; throat and breast marked with broad stripes of chocolate brown.

* **Krider's Hawk.** *Buteo borealis krideri* HOOPES.

Range: North-central Great Plains region, from central Alberta and Saskatchewan south to east-central Wyoming and central Minnesota.

A very light colored form. Upperparts brownish gray with more or less white on head, neck and scapulars; underparts almost entirely white; tail white or nearly so. There is much variation in the plumage of this subspecies and few individuals can be considered typical.

* **Western Red-tailed Hawk.** *Buteo borealis calurus* CASSIN.

Range: Southeastern Alaska and western Mackenzie, south to southern Lower California and northern Mexico, and east to the Great Plains.

This form is characterized by a barred tail, which shows more or less red, and by barred flanks. The general coloration is much darker than that of the eastern form, although there is much variation and some individuals are nearly black.



DISTRIBUTION OF THE RED-TAILED HAWK

1—*Buteo borealis borealis*, 2—*B. b. umbrinus*, 3—*B. b. krideri*, 4—*B. b. calurus*, 5—*B. b. alascensis*, 6—*B. b. fuertesi*, 7—*B. b. fumosus*, 8—*B. b. socorroensis*, 9—*B. b. costaricensis*, 10—*B. b. jamaicensis*.

* **Alaskan Red-tailed Hawk.** *Buteo borealis alascensis* GRINNELL.

Range: The Pacific slope from Yakutat Bay to the Queen Charlotte Islands
The coloration of this form is similar to that of the western red-

tail but somewhat darker in tone. The birds are distinctly smaller. Although not listed in the A. O. U. Check List, this form is recognized by most authorities.

* **Texan Red-tailed Hawk.** *Buteo borealis fuertesi* SUTTON AND VAN TYNE.

Range: Southwestern Texas, southern New Mexico, northern Chihuahua, and Coahuila.

This is a light colored race somewhat similar to Krider's hawk but with darker upperparts and bright rufous tail with little or no white.

Tres Marias Red-tailed Hawk. *Buteo borealis fumosus* NELSON.

Range: Tres Marias Islands.

Upperparts dark with more rufous on the sides; thighs heavily barred with brown.

Socorro Red-tailed Hawk. *Buteo borealis socorroensis* NELSON.

Range: Socorro Island, off west coast of Mexico.

A rather small form with upperparts dark and underparts uniformly light cinnamon; flanks deep vinaceous cinnamon, indistinctly barred.

Central American Red-tailed Hawk. *Buteo borealis costaricensis* RIDGWAY.

Range: Southern Mexico and Guatemala, south to western Panama.

Smaller than the northern forms; tail uniform rufous with one narrow subterminal band; flanks light rufous instead of barred.

Jamaican Red-tailed Hawk. *Buteo borealis jamaicensis* (GMELIN).

Range: Jamaica, Haiti, Puerto Rico, and other islands of the West Indies.

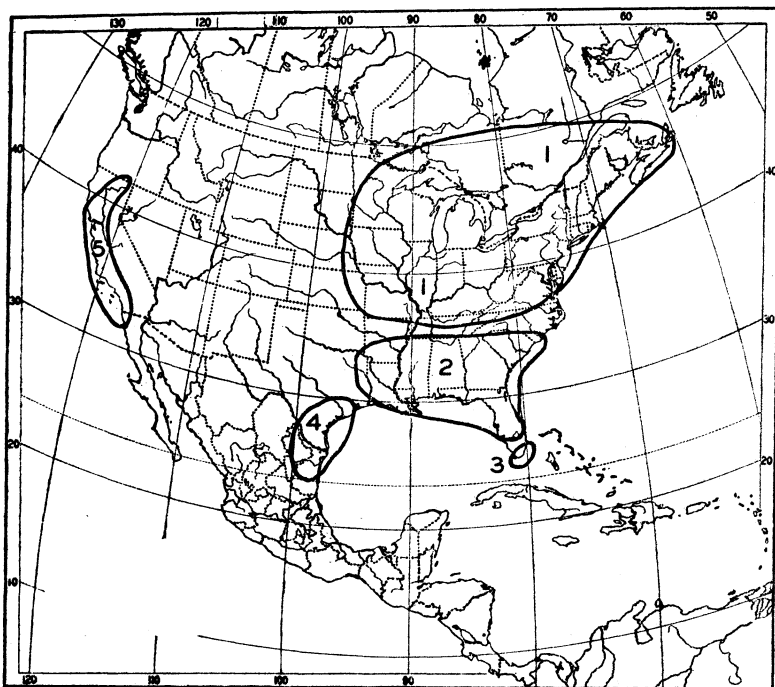
A very small form; sooty brown above; tail red with black band; chest and abdomen with ferruginous streaks.

HARLAN'S HAWK

* **Harlan's Hawk.** *Buteo harlani* (AUDUBON).

Range: Northwestern British Columbia, southwestern Yukon and adjoining regions.

The typical coloration is nearly uniform sooty black, more or less speckled with white, tail mottled or marbled with longitudinal streaks.



DISTRIBUTION OF THE RED-SHOULDERED HAWK

1—*Buteo lineatus lineatus*, 2—*B. l. allenii*, 3—*B. l. extimus*, 4—*B. l. texanus*, 5—*B. l. elegans*.

Strictly typical plumage is rarely found but the mottled tail is the best distinguishing character in any plumage.

For a good many years this species was regarded as a form of the red-tailed hawk and to it was allocated a breeding range in southern Louisiana and the Gulf States. This supposition as to breeding range was found to be an error and its specific status is now recognized (Peters, 1931).

RED-SHOULDERED HAWKS

* **Eastern Red-shouldered Hawk.** *Buteo lineatus lineatus* (GMELIN).

Range: From the eastern edge of the Great Plains east through Ontario, southern Quebec and Nova Scotia, south to southern Kansas, Tennessee and North Carolina.

Reddish brown above with lesser wing coverts bright chestnut; underparts rufous brown indistinctly barred with white; tail black, banded with white.

* **Floridan Red-shouldered Hawk.** *Buteo lineatus alleni* RIDGWAY.

Range: Lower Austral zones from Oklahoma, Arkansas and eastern Texas to South Carolina and southeastern Florida.

Similar in color to the eastern race but much smaller.

* **Insular Red-shouldered Hawk.** *Buteo lineatus extimus* BANGS.

Range: The southeastern tip of Florida and the Florida Keys.

Slightly darker and much smaller than the preceding form.

* **Texan Red-shouldered Hawk.** *Buteo lineatus texanus* BISHOP.

Range: Coastal regions from south-central Texas into Tamaulipas, Mexico.

As large or larger than the typical form. Plumage darker and breast more spotted with buff; head and neck more rufous.

* **Red-bellied Hawk.** *Buteo lineatus elegans* CASSIN.

Range: Austral zones of Pacific slope from northern California to northern Lower California.

Much darker than the typical form; chest and breast uniform rufous.

BROAD-WINGED HAWKS

The broad-winged hawk occurs rather commonly throughout eastern North America and in this area there are apparently no significant geographical variations in size or coloration, although dark color phases are not uncommon. On the other hand, in the comparatively small area of the West Indies there are four insular races. In Central and South America the broad-winged hawk is replaced by *Buteo magnirostris*, a closely related species of wide distribution, which has been separated into a great many geographical forms.

* **Broad-winged Hawk.** *Buteo platypterus platypterus* (VIEILLOT).

Range: Central Alberta, Ontario, and southern Quebec south to central Texas and Florida.

The typical form is characterized by dark brown plumage with lighter edgings above; tail brownish black with two bands.

* **Cuban Broad-winged Hawk.** *Buteo platypterus cubanensis* BURNS.

Range: Cuba, the Isle of Pines, and possibly Puerto Rico.

Slightly smaller than the typical form and lacking the gray phase of upper plumage; more heavily marked on the thighs and lining of wings.

Antillean Broad-winged Hawk. *Buteo platypterus antillarum* CLARK.

Range: St. Vincent, Grenada, and the larger Grenadine Islands.

Smaller than the Cuban form; throat generally darker and the barring on the thighs narrower.

Rivieri's Broad-winged Hawk. *Buteo platypterus rivieri* VERRILL.

Range: Lesser Antilles from Dominica to Santa Lucia.

Differs from the preceding in being darker and more sooty above and more heavily barred below.

Antiguan Broad-winged Hawk. *Buteo platypterus insulicola* RILEY.

Range: Antigua Island.

Smaller than the other subspecies. Much lighter than the Antillean broad-wing, with the bars below narrower and less sharply defined.

SWAINSON'S HAWK

* **Swainson's Hawk.** *Buteo swainsoni* BONAPARTE.

Range: Western North America from British Columbia, the northwestern Mackenzie district and Manitoba, south to northern Mexico and southeastern Arizona.

Swainson's hawk is one of the few buteos which do not have distinctive subspecies. There is much individual variation and melanism is of frequent occurrence but no geographical races have been recognized.

ZONE-TAILED HAWKS

* **Zone-tailed Hawk.** *Buteo albonotatus albonotatus* KAUP.

Range: Lower California, southern Arizona, southern New Mexico, and southwestern Texas, south to Panama.

Black with a slaty shade on chest and shoulders; tail black with three grayish white bars.

Southern Zone-tailed Hawk. *Buteo albonotatus abbreviatus* CABANIS.

Range: Pearl Island and northern Colombia east to Surinam.

Smaller than the northern subspecies. Plumage blacker and without the slaty shade on chest and shoulders.

WHITE-TAILED HAWKS

- * Sennett's White-tailed Hawk. *Buteo albicaudatus hypospodius*
GURNEY.

Range: Lower Rio Grande valley south through Mexico and Central America to northwestern Colombia and Venezuela.

Slightly smaller and paler than the typical form; the cross-bars on underparts and tail finer and more broken.

- Guianan White-tailed Hawk. *Buteo albicaudatus colonus*
BERLEPSCH.

Range: Northern Colombia east of the mountains, east to Surinam.

Much smaller than either of the other forms. Head and neck darker and bars on tail darker and wider.

- White-tailed Hawk. *Buteo albicaudatus albicaudatus* VIEILLOT.

Range: Southern South America from northwestern Argentina and southern Brazil southward.

Larger and darker than Sennett's white-tailed hawk.

SHORT-TAILED HAWK

- * Short-tailed Hawk. *Buteo brachyurus* VIEILLOT.

Range: Southern Florida and eastern Mexico, south through Central America to Brazil, Peru, and Paraguay.

ROUGH-LEGGED HAWKS

The rough-legged hawk, an arctic species circumpolar in distribution, differs from the other species of *Buteo* in that the tarsi are feathered all the way to the toes. Because of this character many authors have placed it in a separate genus (*Archibuteo* or *Triorchis*). At present it is more or less generally agreed that it is a *Buteo*. In addition to the three subspecies here listed there is a Kamchatkan race that possibly deserves recognition.

- European Rough-legged Hawk. *Buteo lagopus lagopus*
(PONTOPPIDAN).

Range: Northern regions of the Scandinavian countries and east to central Siberia.

The largest of the three forms. Plumage lighter and browner than that of the American subspecies; darker with much less white than in the Siberian race.

* **Siberian Rough-legged Hawk.** *Buteo lagopus pallidus*
(MENZBIER).

Range: Arctic regions of northern Siberia from the Ob Valley to western Alaska (Friedmann, 1934).

Larger than the American form, and lighter in color. Feathers of upperparts broadly margined with white; streaks on throat and breast paler and narrower.

* **American Rough-legged Hawk.** *Buteo lagopus s.-johannis*
(GMELIN).

Range: Arctic America from northern Alaska east to Newfoundland.

Slightly smaller and, on the average, much darker than the typical form. There is much variation in color and some birds are nearly black.

FERRUGINOUS ROUGH-LEG

This is the largest of all the American buteos and is probably not equalled in size by any other species of the genus. It is strictly an American form and there are no closely related species. As in the preceding species the tarsi are feathered to the toes.

* **Ferruginous Rough-leg.** *Buteo regalis* (GRAY).

Range: Southern Washington, Alberta, and Manitoba, south to northern California, Nevada, Utah, and Colorado.

HARRIS'S HAWKS

* **Harris's Hawk.** *Parabuteo unicinctus harrisi* (AUDUBON).

Range: Southwestern United States from California to Texas, south to Panama and northern South America.

General coloration sooty brown; lesser wing coverts and thighs reddish brown.

One-banded Hawk. *Parabuteo unicinctus unicinctus* (TEMMINCK).

Range: South America from Venezuela and Surinam to central Argentina and central Chile.

Slightly smaller and more blackish brown than the preceding.

MEXICAN GOSHAWKS

Since this species resembles some of the small South American buteos and is in no way related to the true goshawks, the above common name is inappropriate.

There has been some controversy regarding the classification of the forms of the genus *Asturina*. Swann (1922) and Swann and Wetmore (1930) separate it into two species, *plagiata* and *nitida*. The former is divided into two forms and the latter into three. Peters (1931) includes all five in one species and uses the name *nitida* as it has priority over *plagiata*. This classification seems to be the most logical since the characters used to distinguish the two species are very slight.

* **Mexican Goshawk.** *Asturina nitida plagiata* SCHLEGEL.

Range: Southern Arizona and the lower Rio Grande Valley south to Guatemala.

Plumage above dark gray without bars; chest gray without bars; abdomen lightly banded.

Central American Goshawk. *Asturina nitida micrus* MILLER AND GRISCOM.

Range: Nicaragua, south on the Pacific slope to northwestern Costa Rica. Smaller and plumage paler than that of the Mexican goshawk.

Costa Rican Goshawk. *Asturina nitida costaricensis* SWANN.

Range: Southern and southwestern Costa Rica, south to Panama.

Similar in size but darker in color than the preceding. Lightly barred above and below.

Shining Goshawk. *Asturina nitida nitida* (LATHAM).

Range: Tropical South America from Panama to southern Brazil.

Slightly larger than the Central American form and barred above with silvery white; underparts banded with silvery white and slaty gray.

Bolivian Goshawk. *Asturina nitida pallida* TODD.

Range: Eastern Bolivia.

Lighter than the typical form, with more bluish gray and the barring below narrower.

MEXICAN BLACK HAWKS

* **Mexican Black Hawk.** *Buteogallus anthracinus anthracinus*
(LICHTENSTEIN).

Range: Southern Arizona, New Mexico and Texas, south to northern South America.

Plumage entirely black, excepting a narrow white line across the base and a broad white band across the middle of the tail.

Antillean Black Hawk. *Buteogallus anthracinus cancrivorus*
(CLARK).

Range: Lesser Antilles and adjacent coastal districts of Colombia and Venezuela.

Plumage blacker and tail band narrower than that of the typical form.

GOLDEN EAGLES

The golden eagle is a wide ranging species which occurs in nearly all suitable localities in the arctic and temperate zones of the northern hemisphere but not in the tropics. It has never been recorded south of the equator. As in other species which occupy so large a range, there is considerable difference in the size and coloring of birds from various geographical areas. According to Swann and Wetmore (1931), the principal characters by which the different subspecies may be distinguished are size, color of tarsi, color of hind neck plumage, color of under wing coverts and under parts of the body, and the presence or absence of rufous tints.

* **American Golden Eagle.** *Aquila chrysaëtos canadensis*
(LINNAEUS).

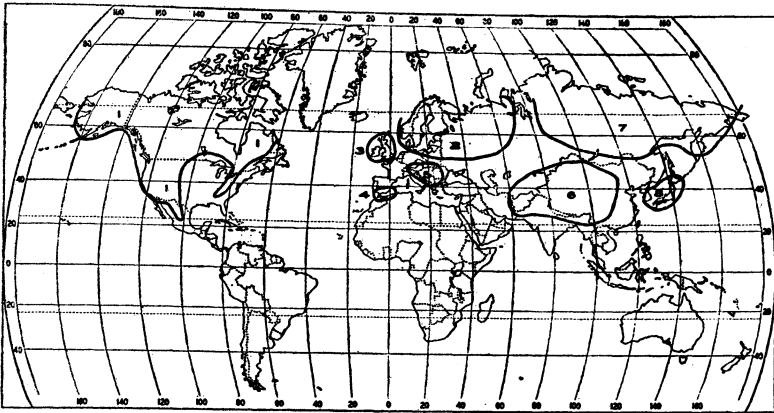
Range: North America from northern Alaska east to Ungava, south to Lower California, central Mexico and, in the mountains of the eastern United States, to North Carolina and Tennessee.

The American bird is larger and very much darker than the typical form. The tarsi are dark brown, the upperparts and tibial plumes blackish brown, and the hind neck light brown.

Scandinavian Golden Eagle. *Aquila chrysaëtos chrysaëtos*
(LINNAEUS).

Range: Scandinavian countries east to northern Russia and south through central Europe to the Carpathian Mountains.

Comparatively small; plumage very pale; tarsi pale brown mottled with white; hind neck feathers pale tawny with light brown edges and pale tips; breast tawny.



DISTRIBUTION OF THE GOLDEN EAGLE

1—*Aquila chrysaetos canadensis*, 2—*A. c. chrysaetos*, 3—*A. c. fulvus*, 4—*A. c. homeyeri*, 5—*A. c. berthelemyi*, 6—*A. c. daphanea*, 7—*A. c. nobilis*, 8—*A. c. japonica*.

British Golden Eagle. *Aquila chrysaetos fulva* (LINNAEUS).

Range: British Isles.

Slightly larger and darker than the typical form. Tarsi light rufous brown; hind neck rufescent buff with dark brown centers; plumage below chocolate brown.

Spanish Golden Eagle. *Aquila chrysaetos homeyeri* SEVERTZOV.

Range: Spain, Portugal, and the mountains of northern Africa.

Similar in size to the preceding form. General color dark blackish brown without rufous tints; tarsi pale brown; feathers of hind neck light brown with buff tips.

Alpine Golden Eagle. *Aquila chrysaetos berthelemyi* JAUBERT.

Range: The Alps of central Europe, southern Germany, upper Austria, and the Balkans.

A very large and dark form; deep umber brown above and below; tarsi brownish buff; feathers of hind neck brown with paler tips.

Himalayan Golden Eagle. *Aquila chrysaetos daphanea* SEVERTZOV.

Range: Central Asia from Afghanistan and Baluchistan to eastern Assam and north to Transbaikalia.

Smaller than the preceding and much lighter than the typical form. Hind neck light tawny rufous; tarsi deep ferruginous with dark shaft lines, nearly black next to toes.

Siberian Golden Eagle. *Aquila chrysaëtos nobilis* PALLAS.

Range: Northern and eastern Siberia, south to the Himalayas, northern Mongolia and Kamchatka.

The largest of all forms. Plumage very dark blackish brown with no rufous below; tibial plumes very long; tarsi pale rufous buff, nearly white at bottom; hind neck rather dull buff.

This subspecies is not recognized by Peters (1931) who assigns two others to the range given above: *A. c. obscurior* Sushkin from the Russian Altai east to Transbaikalia and northern Mongolia, and *A. c. kamtschatica* Severtzov to Kamchatka.

Japanese Golden Eagle. *Aquila chrysaëtos japonica* SEVERTZOV

Range: Korea and Japan.

The smallest form. Similar to *A. c. daphanea* but smaller, darker, and with much lighter tarsi.

GRAY SEA EAGLES

*** Greenland Sea Eagle.** *Haliaeetus albicilla groenlandicus* BREHM.

Range: Greenland.

Differs from the typical form in considerably larger size.

This subspecies is not recognized by Peters (1931) nor included in the A. O. U. Check-List (1931). Subspecific status is possibly more deserved in this case, however, than in that of the Alaskan bald eagle and several other accepted subspecies (Jourdain, 1933; Swann and Wetmore, 1934; and Jourdain in Bent, 1937, p. 316).

White-tailed Sea Eagle. *Haliaeetus albicilla albicilla* (LINNAEUS).

Range: Iceland, formerly British Isles, the Scandinavian countries south to the Balkans and throughout central and eastern Europe, Asia Minor, northern and central Asia and Siberia east to Mongolia and Kamchatka.

BALD EAGLES

Although the bald eagle is found only in North America the genus comprises six or seven species that occur in other parts of the world and is closely related to the genus *Ichthyophaga* of central Asia. All of these birds are rather sluggish in habits. They are normally found around larger bodies of water, their diet consisting largely of fish and carrion. As in many other groups there is a gradual decrease in size from the northern to the southern parts of the range and separation of the various forms is largely a matter of personal opinion.

* **Southern Bald Eagle.** *Halizetus leucocephalus leucocephalus*
(LINNAEUS).

Range: The southern half of the United States, south to Lower California and northern Mexico. Most common along the Atlantic and Gulf Coasts.

* **Northern Bald Eagle.** *Halizetus leucocephalus alascanus*
TOWNSEND.

Range: Northwestern Alaska east to northern Ungava and south to British Columbia, northern Michigan and the northeastern United States.

The two forms differ only in size, the northern averaging much larger.

STELLER'S SEA EAGLE

* **Steller's Sea Eagle.** *Thalassoaëtus pelagicus* (PALLAS).

Range: Northeastern Siberia and Kamchatka. There are several records of its occurrence in western Alaska.

Peters (1931, p. 259) unites this genus with *Halizetus*. It would seem to deserve generic rank, however, for the bird has a stronger bill which differs in shape and is much greater in height; also the tail has two more feathers.

MARSH HAWKS

The marsh hawks or harriers, as they are commonly called by Europeans, comprise a large group of species found in all parts of the world. There are two species in South America and two or three in most of the countries of Europe but only one race occurs in North America. All are similar in general appearance and habits.

* **Marsh Hawk.** *Circus cyaneus hudsonius* (LINNAEUS.)

Range: North America from Lower California, Ohio and Virginia northward.

More brownish gray than the typical form; males have a few small rufous spots on the underparts.

Hen Harrier. *Circus cyaneus cyaneus* (LINNAEUS).

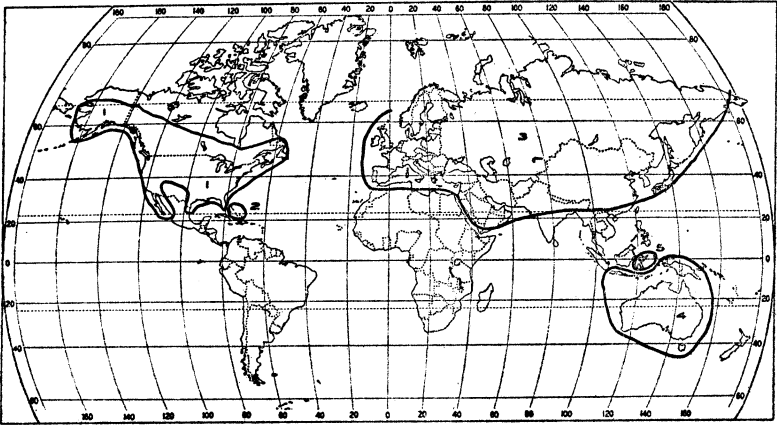
Range: Nearly all of Europe and western Siberia.

Males have no rufous spots on underparts.

Siberian Hen Harrier. *Circus cyaneus taissiae* BUTURLIN.

Range: Northeastern Siberia.

Both males and females are paler than those of the typical form.



DISTRIBUTION OF THE OSPREY

1—*Pandion haliaetus carolinensis*, 2—*P. h. ridgwayi*, 3—*P. h. haliaetus*, 4—*P. h. cristatus*, 5—*P. h. microhaliaetus*.

OSPREYS

The osprey or fish hawk is a widely distributed species occurring throughout most of the northern hemisphere as well as in the West Indies and Australia. The genus consists of a single species with five geographical races and may be distinguished from all other birds of prey by the rough, reticulate processes on the under sides of the toes, the reversible outer toe, and the particularly heavy and strong feet and claws. These are adaptations for grasping prey which consists entirely of fish.

* American Osprey. *Pandion haliaetus carolinensis* (GMELIN).

Range: Northwestern Alaska to Newfoundland and south to Lower California and Florida.

Darker above; fewer marking below; the stripes on head blacker than in the typical form.

European Osprey. *Pandion haliaetus haliaetus* (LINNAEUS).

Range: Scandinavian countries east to Kamchatka and south to Spain, northern Africa, Arabia, and China.

Crown stripes browner; markings below more numerous than in the American form.

Bahaman Osprey. *Pandion haliaetus ridgwayi* MAYNARD.

Range: Bahama Islands.

Head, hind neck and underparts pure white.

White-headed Osprey. *Pandion haliaetus cristatus* (VIEILLOT).

Range: Australia, Tasmania, Java, the Moluccas, and New Guinea.

Similar above to the typical form, but head much whiter. Slightly smaller.

Lesser Osprey. *Pandion haliaetus microhaliaëtus* BRASIL.

Range: New Caledonia and the Celebes.

Much smaller but otherwise similar to the Australian form.

CARACARAS

The caracaras represent a genus found only in the Americas. Only one race occurs in the United States but there are several species in South America. All are carrion eaters similar in habits; they resemble the vultures in many ways.

* **Audubon's Caracara.** *Polyborus cheriway auduboni* CASSIN.

Range: Southern United States and Cuba, south through Mexico to Panama.

Larger than the typical form; bill comparatively larger; plumage browner.

Cheriway Caracara. *Polyborus cheriway cheriway* (JACQUIN).

Range: Northwestern South America through Colombia, Ecuador and Venezuela to Surinam.

Much blacker than the American race.

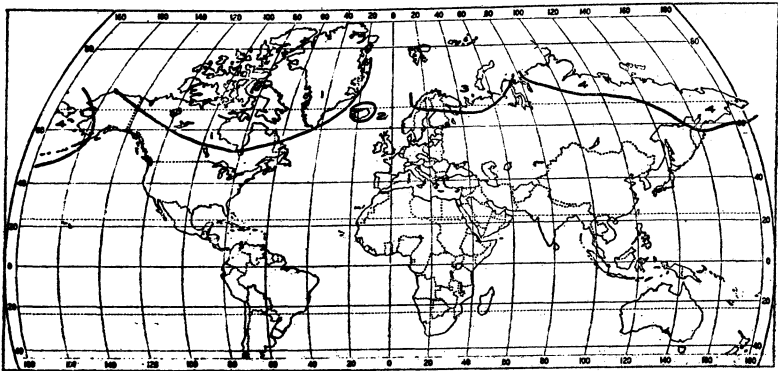
Tres Marias Caracara. *Polyborus cheriway pallidus* NELSON.

Range: Tres Marias Islands.

A pale insular form.

GYRFALCONS

Much has been written concerning the classification of the gyrfalcons but authorities have been unable to arrive at the same conclusions. The third edition of the A. O. U. Check-List (1910) recognized four American forms, one a separate species and the other three as races of



DISTRIBUTION OF THE GYRFALCON

1—*Falco r. obsoletus*, 2—*F. r. islandus*, 3—*F. r. rusticolus*, 4—*F. r. uralensis*.

another species. Swann (1922) recognized four forms of one species, three in North America and one of these a new race from Alaska. The fourth edition of the A. O. U. Check-List (1931) and Peters (1931) concurred in listing three American forms. The recent study by Wetmore (Swann and Wetmore, 1936), however, indicates that the birds formerly known as the white gyrfalcon (*F. r. candicans*) and the black gyrfalcon (*F. r. obsoletus*) are but color phases of the same subspecies and that there are consequently but two forms of the gyrfalcon in North America.

* Greenland Gyrfalcon. *Falco rusticolus obsoletus* GMELIN.

Range: Arctic zones from Greenland to northern Alaska.

This gyrfalcon has two color phases, one nearly white and the other brownish black. There are numerous intermediates in brownish gray plumage.

* Asiatic Gyrfalcon. *Falco rusticolus uralensis* (SEVERTZOV AND MENZBIER).

Range: Arctic zones from western Siberia east to Bering coast of Alaska, south to Kamchatka.

In this form the outer primary is equal to or shorter than the fourth, instead of longer as in the other races. The barring of the plumage is buffish white.

Scandinavian Gyrfalcon. *Falco rusticolus rusticolus* LINNAEUS.

Range: Northern Scandinavian countries, Lapland and northern Russia, east to western Siberia.

This race is always dark with no white phase. The plumage is barred with pale bluish gray.

Iceland Gyrfalcon. *Falco rusticolus islandus* BRÜNNICH.

Range: Iceland.

Slightly larger than *F. r. rusticolus*; plumage lighter, barred with grayish white.

PRAIRIE FALCON

*** Prairie Falcon. *Falco mexicanus* SCHLEGEL.**

Range: Western North America from southern British Columbia and southeastern Saskatchewan south to Lower California and northern Mexico.

There are no geographical races of this species although there are several closely related species in eastern Europe and India.

DUCK HAWKS

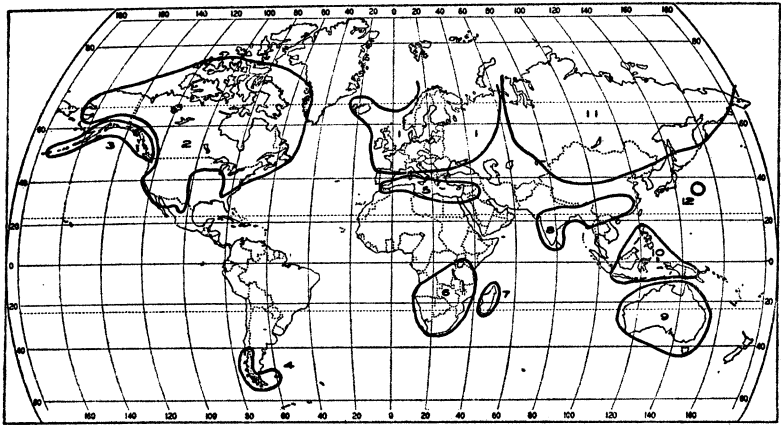
The duck hawk, or peregrine falcon as it is known in all countries except America, is the most widely distributed of any raptorial bird in the world. One or more forms occur on every continent and in nearly every country. As in other species of circumpolar distribution, the northern forms are larger and those of the southern and tropical regions are smaller and more richly colored. There is great variation in color and pronounced individuality of markings even among birds of the same region. Many geographical races have been described and few authorities agree on the status of several races in eastern Europe and central Asia.

Peters (1931) follows Hartert in considering the Barbary falcon (*F. peregrinoides*) a subspecies of the peregrine, but most other authorities regard its smaller size and differences in coloration as sufficiently definitive to give it specific status.

*** Peregrine Falcon. *Falco peregrinus peregrinus* TUNSTALL.**

Range: Casual in Greenland. Breeds in Iceland and throughout most of Europe south to southern Spain and the Balkans and east to western Siberia.

Upperparts bluish slate barred with blackish slate; underparts white with a faint pinkish buff tinge on sides of breast; throat and breast unspotted; chest with narrow black shaft stripes.



DISTRIBUTION OF THE PEREGRINE FALCON OR DUCK HAWK

1—*Falco peregrinus peregrinus*, 2—*F. p. anatum*, 3—*F. p. pealei*, 4—*F. p. cassini*, 5—*F. p. brookei*, 6—*F. p. perconfusus*, 7—*F. p. radama*, 8—*F. p. peregrinator*, 9—*F. p. macropus*, 10—*F. p. ernesti*, 11—*F. p. calidus*, 12—*F. p. fruitii*.

* Duck Hawk. *Falco peregrinus anatum* BONAPARTE.

Range: Nearly all of North America (excepting the Pacific Northwest) south to Lower California, central Mexico and South Carolina.

Slightly larger than the typical form. The black mustachial stripe is more extensive, the chest is more buffy and has fewer markings.

* Peale's Falcon. *Falco peregrinus pealei* RIDGWAY.

Range: The Pacific coast region from the Aleutian to the Queen Charlotte Islands.

Much darker than the duck hawk. Head, neck and shoulders almost black and the underparts heavily marked with slaty black.

Cassin's Falcon. *Falco peregrinus cassini* SHARPE.

Range: Western coast of South America from Chile to the Straits of Magellan and the Falkland Islands.

Smaller and paler than the duck hawk; back more gray with wider bars; underparts more densely and finely barred.

Mediterranean Peregrine. *Falco peregrinus brookei* SHARPE.

Range: Southern Spain, Islands of the Mediterranean and adjacent countries east to Asia Minor.

Smaller than the typical form; feet more slender; color more ruddy buff with underparts more finely spotted.

South African Peregrine. *Falco peregrinus perconfusus* COLLIN AND HARTERT.

Range: Africa from the Blue Nile and Angola south to Cape Colony.

The smallest of the species. More dull in color than the typical form; markings on abdomen closer together.

Madagascar Peregrine Falcon. *Falco peregrinus radama* HARTLAUB.

Range: Madagascar and Comoro Islands.

Very similar to the South African race but with darker plumage and black markings on underparts.

Indian Peregrine Falcon. *Falco peregrinus peregrinator* SUNDEVALL.

Range: Indian Peninsula, Ceylon and south China.

Larger than the South African peregrine but smaller than the typical form. Darker above than the latter; throat paler; underparts tawny ferruginous.

Black-cheeked Falcon. *Falco peregrinus macropus* SWAINSON.

Range: Australia and Tasmania.

Similar to the Indian peregrine in size but darker in color. Head and nape deep black; remainder of upper parts bluish ashy barred with black; underparts buffy, closely and narrowly barred with black.

Ernest's Falcon. *Falco peregrinus ernesti* SHARPE.

Range: Philippine Islands, Borneo, Greater Sunda Islands, New Guinea, and adjacent regions.

Similar in size to the Australian form but plumage darker; chest more rufous; under tail coverts and thighs barred with bluish gray instead of white.

Siberian Peregrine Falcon. *Falco peregrinus calidus* LATHAM.

Range: Northern Asia from western Siberia east to Kamchatka and south to eastern China.

Much larger and paler than the typical form. Much less black on cheeks and ear coverts; more white on sides of neck behind ear coverts; white below with fewer markings and no buffy tinge.

Volcano Islands Peregrine. *Falco peregrinus fruitii* MOMIYAMA.

Range: Volcano Islands, Bonin Islands and adjacent region.

Similar to Peale's falcon but blacker on head and tail; underparts more slaty gray.

The peregrines from the Commander Islands have been separated under the name *rudolfi* but this form has not been generally accepted.

APLOMADO FALCONS

*** Aplomado Falcon.** *Falco fusco-cærulescens septentrionalis* TODD.

Range: Arizona, New Mexico, and southern Texas, south through Mexico to Central America.

Larger than the typical form. Bill larger, tail longer and upperparts more brownish slate.

Lesser Aplomado Falcon. *Falco fusco-cærulescens femoralis* TEMMINCK.

Range: Tropical South America from Matto Grosso, Brazil, to Venezuela. Possibly north to Central America.

Smaller and more brightly colored than the typical form. More bluish slate and less brown above; less white on tail, bars narrower.

Southern Aplomado Falcon. *Falco fusco-cærulescens fusco-cærulescens* VIEILLOT.

Range: South America from Paraguay, northern Argentina, and Chile southward.

Smaller than the North American form.

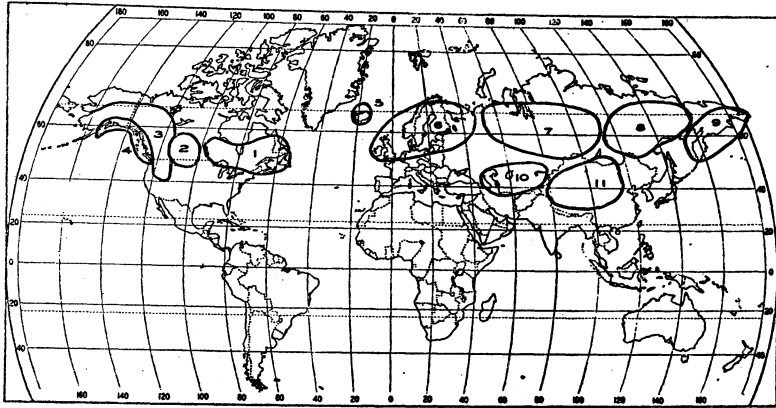
Andean Aplomado Falcon. *Falco fusco-cærulescens pichinchæ* CHAPMAN.

Range: The Andes of Ecuador and Peru.

Differs from the preceding in larger size, darker upperparts, deeper buffy tints of breast, and smaller dark areas.

PIGEON HAWKS

The pigeon hawk may be considered a "small edition" of the duck hawk for it is similar to that species except in size and in selection of a nesting site. It either constructs its own nest in a tree or uses an old nest of some other bird, while the duck hawk makes no nest but deposits its eggs in some protected place on a rocky ledge. All authorities at present regard the European and Asiatic merlins and the pigeon hawk as geographical forms of the same species which, repre-



DISTRIBUTION OF THE MERLIN OR PIGEON HAWK

1—*Falco columbarius columbarius*, 2—*F. c. richardsonii*, 3—*F. c. bendirei*, 4—*F. c. suckleyi*, 5—*F. c. subaesalon*, 6—*F. c. aesalon*, 7—*F. c. regulus*, 8—*F. c. insignis*, 9—*F. c. pacificus*, 10—*F. c. christiani-ludovici*, 11—*F. c. lymani*.

sented by several different races, occupies an almost continuous range around the northern hemisphere.

From a zoogeographic point of view the distribution of the pigeon hawks is interesting in that a very light colored American race, *richardsonii*, occupies an area between the ranges of two dark forms, *columbarius* and *bendirei*, which are very similar to each other. There is a comparable situation in central Asia.

* Eastern Pigeon Hawk. *Falco columbarius columbarius* LINNAEUS.

Range: Eastern and central Canada from the northern limit of trees south to southern Manitoba, northeastern Minnesota, northern Michigan, and northern Maine.

The adult male is bluish slaty gray above with distinct black shaft lines on the feathers and with dark brown shaft streaks below. The female is dark umber brown above with wider and denser streaking below.

* Richardson's Pigeon Hawk. *Falco columbarius richardsonii* RIDGWAY.

Range: The plains region of central and southern Alberta and Saskatchewan south to northern Montana and North Dakota.

This form averages slightly larger than the preceding; the plumage is very much paler and more sandy brown. The male is pale bluish gray and brown above, striped with pale brown below, and the rufous

on the hind neck nearly forms a collar. The female is light brown and rufous above, instead of umber brown, and the markings below are light sandy brown.

* **Western Pigeon Hawk.** *Falco columbarius bendirei* SWANN.

Range: Northwestern Alaska, Yukon and northwestern Mackenzie, south to British Columbia and, in the mountains, to northern California and Utah.

Differs very slightly from the eastern race but much darker than *richardsonii*. The male is slightly paler above than the eastern form; the female slightly more brown and less dark umber above.

* **Black Pigeon Hawk.** *Falco columbarius suckleyi* RIDGWAY.

Range: Kodiak Island and coastal regions south to British Columbia and Vancouver Island.

Slightly smaller and very much darker than typical form; bars on tail nearly obsolete. Male dark slaty black above, markings of underparts heavy and dark; female almost black above, markings below dense and very dark.

* **Iceland Merlin.** *Falco columbarius subaesalon* BREHM.

Range: Iceland. Accidental in Greenland.

Similar to the merlin of western Europe but darker in both sexes. This and all other old world races differ from the typical form in having one or two more bands on the tail.

The European merlin (*Falco aesalon aesalon*) is listed in the A. O. U. Check-List (1931) as accidental in Greenland. Practically all recent authors, however, regard the old world merlins as subspecies of the pigeon hawk and it is the Iceland form (*subaesalon*) of this species which has been taken in Greenland.

Common Merlin. *Falco columbarius aesalon* TUNSTALL.

Range: British Isles, northern Europe, and the Scandinavian countries, east to the Minsk River and the Baltic States.

Both sexes much browner than the typical form; male slaty brown above.

Siberian Merlin. *Falco columbarius regulus* PALLAS.

Range: Northeastern Europe and western Siberia east through the Yenisei Valley, south to Moscow, Novgorod, Itkutsk, and northern Transbaikalia.

This race is supposed to be slightly lighter and more rufous than the preceding form (Peters, 1931). There is a difference of opinion,

however, as to the validity of the distinguishing characters and many authors do not separate *regulus* from *aesalon*.

Asiatic Merlin. *Falco columbarius insignis* (CLARK).

Range: Northern Siberia from the eastern range of *regulus* through Yakutsk to the Stanowi Mountains.

Much paler than the common merlin; male lighter bluish gray with less brown above; female pale brown above, paler below with much less striping.

Kamchatkan Merlin. *Falco columbarius pacificus* (STEGMANN).

Range: Northeastern Siberia, Sakhalin and Kamchatka.

Much darker than the preceding.

Pallid Merlin. *Falco columbarius christiani-ludovici* KLEINSCHMIDT.

Range: The Caucasus region and Kirghiz Steppes, north to Orenburg, Omsk and east to the Altai Mountains

Slightly larger and very much paler than *insignis*. Male pale gray above with pale rufous stripes below; female paler and more rufous.

Altai Merlin. *Falco columbarius lymani* BANGS.

Range: Tian-Shan Mountains, Mongolian Altai region east to the Changhai range and north to southeastern Transbaikalia.

Similar to *insignis* but very much larger.

KESTRELS

The kestrel, a widely distributed and rather common Old World species which occurs in nearly all parts of Europe, Asia, and Africa, is included in the American list because of its accidental occurrence in Greenland and Massachusetts. It is closely related to the American sparrowhawk and like that species has been separated into many geographical races some of which are recognized by all authorities but others are questionable and their exact status still remains to be worked out.

* **Kestrel.** *Falco tinnunculus tinnunculus* LINNAEUS.

Range: All of Europe and western Asia, east to the Yenisei River and south to the Mediterranean and northern Persia.

The adult male differs from the female in having head, neck, lower back, rump, and tail bluish gray, the remaining plumage brighter

and more conspicuously marked. The female is entirely rufous above, more or less barred with black; below paler and streaked with rufous. Tail barred with black.

Siberian Kestrel. *Falco tinnunculus dörriesi* (SWANN).

Range: Northeastern Siberia from the Yenisei Valley to the Amur.

Larger and paler than the typical form; tail much longer. Female much more gray, with less brown and rufous.

Japanese Kestrel. *Falco tinnunculus japonensis* TICEHURST.

Range: Japan and northeastern Asia through north China and Szechuan to Tibet, Ladak, and northern Kashmir.

Slightly larger and darker than the typical form, but lighter than the two following races.

Burmese Kestrel. *Falco tinnunculus saturatus* BLYTH.

Range: Yunnan, central and eastern Burma to Teneserim.

Darker than any other race of this species. Many specimens have a decidedly smoky appearance.

Himalayan Kestrel. *Falco tinnunculus interstinctus* HORSFIELD.

Range: The mountains of the lower Himalayan region and northern India to Assam, Cachar, and Manipur.

Much darker and more heavily spotted and striped than the typical form. Lighter than the Burmese race, the male with less slaty gray above.

Wetmore (1936, p. 436) does not recognize *japonensis* and *saturatus* but combines them with *interstinctus*, although he states that the details of distribution remain to be worked out. Baker (1928, p. 64) recognizes the three but questions the distribution of the various Asiatic races.

Indian Kestrel. *Falco tinnunculus objurgatus* (BAKER).

Range: Central and southern India from Mysore to Travancore and Ceylon.

Differs from the other Indian forms in that the plumage is richer, brighter, and more red; the underparts are very rufous.

Arabian Kestrel. *Falco tinnunculus buryi* GRANT AND
MACKWORTH-PRAED.

Range: Southern Arabia from Aden Protectorate east to Dhufar.

More richly colored, especially below; thighs more rufous and crown more streaked than in typical form; lacks vinous tinge of *carlo*.

African Mountain Kestrel. *Falco tinnunculus carlo* (HARTERT AND NEUMANN).

Range: Highlands of northeastern Africa from Ethiopia and Somaliland to northern Tanganyika.

Smaller and darker than the typical form and similar to *interstinctus* but with less reddish brown. Head, upper tail coverts and tail in males dark slaty gray instead of blue gray as in the typical form. Much of the plumage has a vinous bloom.

Egyptian Kestrel. *Falco tinnunculus rupicolaeformis* (BREHM).

Range: Egypt and Nubia.

Plumage deep reddish brown, especially dark on underparts; markings heavy.

Canarian Kestrel. *Falco tinnunculus canariensis* (KOENIG).

Range: Madeira and the western Canary Islands.

Smaller and much darker than the typical race.

East Canarian Kestrel. *Falco tinnunculus dacotiae* HARTERT.

Range: Eastern Canary Islands (Fuertaventura and Lanzarote).

Larger than *canariensis* but smaller than the typical form; underparts deep rusty.

Cape Verde Kestrel. *Falco tinnunculus neglectus* SCHLEGEL.

Range: Cape Verde Islands.

A small, dark insular form similar to *canariensis* less reddish brown and with heavier markings. Slightly smaller than *carlo*, the gray on head of male more sandy.

South African Kestrel. *Falco tinnunculus rupicolus* DAUDIN.

Range: South Africa north to southern Angola and Nyasaland.

Plumage in general rich rufous red; differs from typical form in that male has sides of face dull blue-gray like top of head, and that tail of female is bluish gray instead of rufous.

Swainson's Kestrel. *Falco tinnunculus rufescens* SWAINSON.

Range: Senegal to the Cameroons and Belgian Congo.

Similar to *carlo* but darker. This supposed race and the two following are not very well understood and the details of distribution of each require additional study.

Archer's Kestrel. *Falco tinnunculus archeri* HARTERT AND NEUMANN.

Range: Lowlands of Somaliland, Socotra Island, and south along the coast to Lamu in Kenya Colony.

Smaller than the typical form; female paler. Doubtfully distinguishable from *carlo*.

Tanganyikan Kestrel. *Falco tinnunculus tanganyikae* GRANT AND MACKWORTH-PRAED.

Range: Tanganyika Territory

Described as smaller and darker than the typical form. Probably the same race as *carlo*.

AMERICAN SPARROW HAWKS

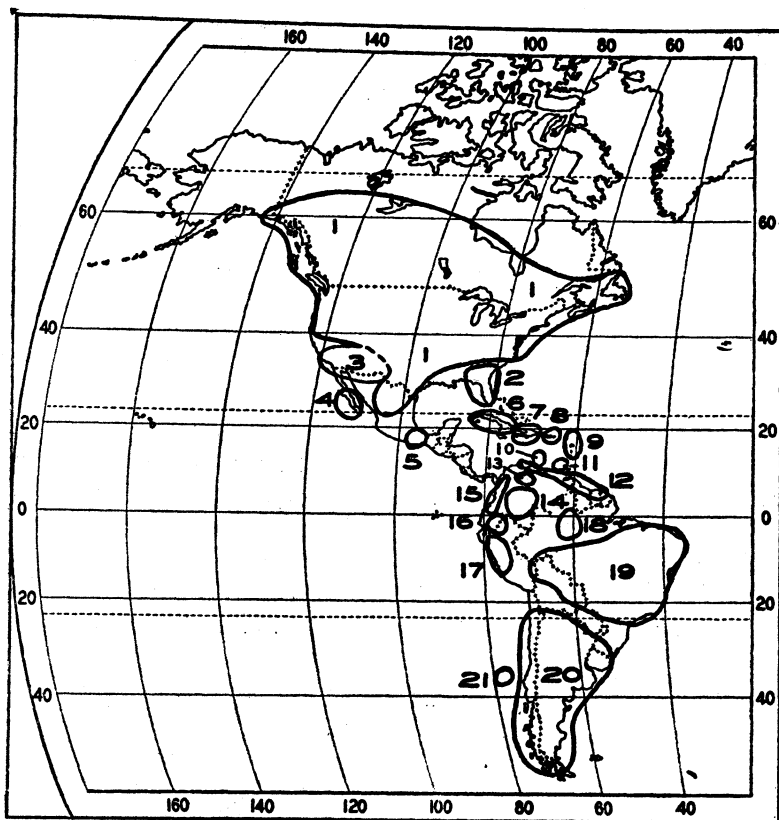
The sparrow hawk is the New World representative of the European kestrel which, although smaller, it resembles in habits and appearance. Some form occurs in nearly every part of North, Central, and South America as well as Cuba and the West Indies. There is much individual variation in color among birds of the same region and a difference in color of the young and old. These variations in addition to the migration of birds from one region to another have made classification difficult. The present arrangement is still far from satisfactory and the exact status and distribution of several forms remain to be determined.

During past years this species has been the subject of a good deal of controversy for the several authorities who have made comprehensive studies of the group have arrived at somewhat different conclusions. Some authors have seen fit to separate the sparrow hawks from the true falcons and place them with the kestrels in the genus *Cerchneis*. Cory (1915) under this genus recognized eleven South American races of one species exclusive of insular forms. Swann (1922) listed only fifteen forms for all the Americas but separated them into four different species. Peters (1931) under the genus *Cerchneis* lists twenty-three forms as one species (*sparverius*) but questions the status and range of three. The whole group probably represents a single species but the present status of some subspecies may be changed by additional research.

*** Eastern Sparrow Hawk.** *Falco sparverius sparverius* LINNAEUS.

Range: Upper Yukon, Mackenzie and Newfoundland south to northern California, Utah, Colorado, central Texas, northern Alabama, and north Carolina.

Back of male normally barred with black; usually a rufous crown patch; underparts light rufous, more or less barred.



DISTRIBUTION OF THE SPARROW HAWK

1—*Falco sparverius sparverius*, 2—*F. s. paulus*, 3—*F. s. phalaena*, 4—*F. s. peninsularis*, 5—*F. s. tropicalis*, 6—*F. s. sparveroides*, 7—*F. s. dominicensis*, 8—*F. s. loquaculus*, 9—*F. s. caribaerum*, 10—*F. s. brevipennis*, 11—*F. s. margaritensis*, 12—*F. s. isabellinus*, 13—*F. s. ochraceus*, 14—*F. s. intermedius*, 15—*F. s. cauae*, 16—*F. s. aequatorialis*, 17—*F. s. peruvianus*, 18—*F. s. distinctus*, 19—*F. s. eidos*, 20—*F. s. cinnamominus*, 21—*F. s. fernandensis*.

* Little Sparrow Hawk. *Falco sparverius paulus* (HOWE AND KING).

Range: Southern Mississippi east to South Carolina and south through Florida.

Smaller than *sparverius* but not as small as *peninsularis*. Male without spotting on underparts; breast light cinnamon fawn, fading nearly to white on lower abdomen. Female slightly deeper red above than in *sparverius*.

* Desert Sparrow Hawk. *Falco sparverius phalaena* (LESSON).

Range: Southern California, southern Nevada, Arizona, New Mexico, and western Texas, south to northern Lower California and northwestern Mexico.

Paler than *sparverius*; tail relatively longer; crown patch averaging larger. The difference between this and the typical form seems to be more constant in the female which is much lighter and more sandy rufous above, slightly lighter below.

* San Lucan Sparrow Hawk. *Falco sparverius peninsularis* MEARNS.

Range: Lower California.

Very much smaller and paler than *phalaena*.

Guatemalan Sparrow Hawk. *Falco sparverius tropicalis* (GRISCOM).

Range: Guatemala, exact limits unknown.

Slightly smaller and darker than typical form. Male has a very dark crown with distinct black shaft lines and black fringe at base of neck; little or no crown patch; heavily barred above; rather light below but heavily marked with large black spots and streaks. Female darker below and more blackish brown than typical form.

Cuban Sparrow Hawk. *Falco sparverius sparveroides* VIGORS.

Range: Cuba and the Isle of Pines.

This form is very unusual in that there are two color phases of the male. One is similar to *paulus* but with little or no crown patch; underparts lighter, lower abdomen pure white. The other phase is dark sooty gray above with more or less red; underparts deep rufous. The female is more reddish brown above, with the bars farther apart; apart; underparts lighter than in *paulus*.

Santo Domingan Sparrow Hawk. *Falco sparverius dominicensis* GMELIN.

Range: Santo Domingo and Haiti.

Male usually without crown patch; black bars on back very wide but few in number; breast pale fawn, unspotted, fading to white on abdomen. Female much richer brown than in the typical form; bars more distinct; below similar to the male but with a few more markings.

Puerto Rican Sparrow Hawk. *Falco sparverius loquaculus* (RILEY).

Range: Puerto Rico and adjacent Islands.

Somewhat similar to *caribaerum* but male not as heavily barred above, more cinnamon and less spotted below; tail with fewer markings. Female less heavily marked below.

Antillean Sparrow Hawk. *Falco sparverius caribæarum* GMELIN.

Range: Lesser Antilles.

Male dark above, heavily barred with black; chest washed with ochraceous fawn or light rufous; numerous large black spots on breast and sides; tail distinctly barred. Underparts of female very heavily streaked and spotted.

Curaçao Sparrow Hawk. *Falco sparverius brevipennis* (BERLEPSCH)

Range: Curaçao, Aruba, and Bonaire Islands.

Similar to *ochraceus* but male more heavily marked on back and with more spotting below. Female slightly darker and more streaked than *isabellinus*.

Margaritan Sparrow Hawk. *Falco sparverius margaritensis* (CORY).

Range: Margarita Island.

Similar to *isabellinus* but male with crown much darker, back lighter and underparts darker; female lighter.

Isabellan Sparrow Hawk. *Falco sparverius isabellinus* SWAINSON.

Range: Coastal districts of northern South America from Santa Marta, Colombia, to Cayenne.

Much smaller than typical form and with little or no crown patch; very light colored above with practically no black markings; very light and unspotted below. Female very light below but with a few streaks and spots of pale brown.

Venezuelan Sparrow Hawk. *Falco sparverius ochraceus* (CORY).

Range: Mountain regions of northeastern Colombia and western Venezuela.

A very distinctive race characterized by deeply colored and unspotted underparts and broad subterminal band on tail. Male similar to *dominicensis* but slightly darker above and below, deep color extending to under tail coverts.

Colombian Sparrow Hawk. *Falco sparverius intermedius* (CORY).

Range: Eastern slopes of the central Andes and the llanos of eastern Colombia east to Venezuela.

Very similar to *ochraceus* and doubtfully distinguishable but supposed to average slightly larger; subterminal tail band narrower; crown of male darker.

Caucan Sparrow Hawk. *Falco sparverius cauae* (CHAPMAN).

Range: Cauca Valley of western Colombia and the western slopes of the central Andes south to northwestern Ecuador.

Very similar to *peruvianus*, doubtfully distinguishable; supposed to differ in having paler underparts.

Andean Sparrow Hawk. *Falco sparverius aequatorialis* MEARNS.

Range: Subtropical and temperate zones of Ecuador.

This form is characterized by very dark underparts marked with blackish brown spots and streaks. Male similar to that of *ochraceus* but much darker above; much darker cinnamon below, spotted on sides. Female more reddish brown and darker.

Peruvian Sparrow Hawk. *Falco sparverius peruvianus* (CORY).

Range: Southwestern Ecuador and northern Peru south to Huanuco.

Differs from *cinnamominus* in that male is smaller, darker below, subterminal band of tail broader. Differs from *eidos* in being darker, tail much darker rufous; female similar, but tail richer brown and less conspicuously marked.

Amazonian Sparrow Hawk. *Falco sparverius distinctus* (CORY).

Range: Rio Branco region of northern Brazil and Amazonas Valley exact limits unknown.

Similar to *isabellinus* but paler above, especially on the head, and much lighter below; wings and tail average longer.

Brazilian Sparrow Hawk. *Falco sparverius eidos* PETERS.

Range: Eastern Peru, eastern Bolivia and Brazil, south of the Amazon, south to northern Paraguay and northeastern Argentina.

Smaller than the typical form; head more bluish gray, black shaft lines more distinct; more heavily spotted below. Differs from *cinnamominus* in smaller size, less spotted underparts, shorter tail, and broader subterminal tail band; female much smaller and lighter in color.

Cinnamon Sparrow Hawk. *Falco sparverius cinnamominus*
SWAINSON.

Range: Chile, southern Bolivia and southern Paraguay south to the Straits of Magellan.

Similar to *eidos* but larger; tail much darker rufous with subterminal band narrower; underparts slightly darker.

Juan Fernandez Sparrow Hawk. *Falco spaverius fernandensis*
(CHAPMAN).

Range: San Fernandez Islands.

A very large form with heavily marked underparts.



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